

ART. XX.—*The Recent Red Sunsets.*

BY MR. ELLERY, F.R.S.

[Oral communication 15th November, 1883.]

I HAVE received a good deal of correspondence in reference to the recent peculiar sunsets, which it appeared have been seen in many other parts of the world, and have created a great deal of interest. I have received a letter from Mr. Bosisto, reporting the fact that, when about seven hundred miles from the Straits of Sunda, the vessel on which he was a passenger passed through a floating mass of pumice dust and ashes, with an occasional charred tree. Similar volcanic *débris* had been reported by other ships. I have received several letters giving different theories of the sunsets. One theory which has appeared in the papers was that so much matter has been taken up outside of the earth's surface as to form another moon. This peculiar sunset has been noticed all over the Southern Hemisphere; and a very unusual state of the upper atmosphere has certainly existed in the Northern Hemisphere, for we have news of a green sun in India frightening the people out of their lives, and this has been attributed to volcanic action. Mr. Moncure Conway told me that in coming through the tropics from America in September the passengers were astonished at seeing the sun assume a steel-blue colour, which it retained all day long, and that on one occasion it was quite green at the time of setting. These appearances are not remarkable, and are not uncommon in the Arctic regions. The green sun was fully accounted for by aqueous vapour in different forms in the atmosphere. It has been said by some writers lately that the sun, if looked at through the steam issuing from the funnel of a steam-engine, would appear green, but I have never tried that experiment. There is no doubt, however, that the sun did assume all kinds of curious colours under different atmospheric conditions. I have myself seen it looking as described by Mr. Conway, a steel-blue, when there was a hazy horizon. It has been stated by Mr. Lockyer that the sunsets are owing to the volcano in the Straits of Sunda. I think we might all rest satisfied that that will not explain them at all. If the volcano in the Straits of Sunda caused the

sunsets, then it has been able to alter the state of the atmosphere all round the world. The effect could not be caused by volcanic dust, because the sunsets have continued such a length of time, and the dust will have been precipitated long ago. Hydrogen would not produce anything like a red sunset. I have only to say, in the first place, that the sunsets are not very remarkable. I have seen far more wonderful ones in other parts of the world, and no notice has been taken of them. In the Mediterranean I have seen a red sky three hours after sunset; and we all know what grand sights are sometimes witnessed in the tropics. There is nothing unusual in the sunsets, except perhaps that they are a little uncommon in these latitudes, and have lasted a little longer than usual. What is rather singular is that above the yellowish or deep orange tinge there has been a distinct purple region. That is not very often seen. Still it is explained by the fact that all these beautiful sights morning and evening are due entirely to the prevalence of vapour in the higher regions of the atmosphere. Indeed, any day during the occurrence of these red sunsets it has been possible by careful examination with an opera glass to see that the atmosphere was not quite clear of cloud. The trace of a slight filmy cloud could just be seen, and there has evidently been vapour high up in the atmosphere for a considerable time past; in fact it could always be seen on the clearest day. I believe therefore that the sunsets are simply due to the presence of vapour in an unusual quantity, and for an unusual length of time for this season of the year. I do not believe the volcano has anything whatever to do with the phenomena. The pumice-stone no doubt came from the Straits of Sunda, but I do not think the red sunsets did. The earthquake and the sunsets happening to occur about the same time, people have connected them.

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ART. XXI.—*The First Discoverers of the New Hebrides.*

By MR. A. SUTHERLAND, M.A.

[Read 15th November, 1883.]